

FACT SHEET FOR NPDES PERMIT WA-002942-4
INDIAN RIDGE YOUTH CAMP

GENERAL INFORMATION	
Applicant	Washington State Department of Social and Health Services
Facility Name and Address	Indian Ridge Youth Camp 19601 Nicks Road, Arlington, WA 98223
Type of Treatment:	Sequencing Batch Reactors (SBRs)
Discharge Location	Jim Creek tributary to the Stillaguamish River Latitude: 48° 10' 25" N Longitude: 122° 03' 05" W
Water Body ID Number	JU33JU

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A—Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix E—Response to Comments.

BACKGROUND INFORMATION

WASTEWATER CHARACTERIZATION

Primary sources of wastewater tributary to the wastewater treatment plant (facility) is domestic sewage consisting of kitchen waste and human waste from the youth camp.

DESCRIPTION OF THE FACILITY

HISTORY

Indian Ridge Correction Center is a juvenile correction facility at an isolated location east of the City of Arlington. No industrial operations occur at the facility. The old facility was a package activated sludge wastewater treatment plant. The new facility consisting of sequencing batch reactors (SBRs) began operating in August 1997.

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TREATMENT PROCESS

The treatment process at the facility includes preliminary treatment through a mechanical fine screen (HYCOR Screen), influent flow measuring by a Parshall Flume, biological treatment in sequencing batch reactors (SBRs) followed by ultraviolet (UV) disinfection system. A diagram showing the facility layout is included in Appendix C.

DISCHARGE OUTFALL

Secondary treated and disinfected effluent from the facility is discharged to Jim Creek tributary to the Stillaguamish River, via 8-inch diameter concrete-asbestos outfall pipe.

RESIDUAL SOLIDS

The facility removes solids during the treatment of wastewater at the headworks (screenings), and in the SBRs (waste activated sludge or biosolids). Screenings removed in the headworks are disposed of at a sanitary landfill. Waste biosolids removed from the SBRs are wasted into an aerobic holding tank. Biosolids in the holding tank are conditioned with polymer and thickened in the tank by settling the solids and decanting the supernatant back to the headworks. The thickened biosolids from the aerobic holding tank are hauled away by a tanker truck for disposal or utilization. A sludge dewatering unit (Somat Press) is available at the facility for biosolids dewatering prior to disposal or utilization.

PERMIT STATUS

The existing permit for this facility was issued on June 17, 1986. This permit expired on June 17, 1991. The Permittee submitted an application for permit renewal in February 1991. The facility is operating under the terms and conditions of the existing permit. The Permittee had submitted an engineering report and plans and specifications for the facility upgrade. These are considered supplements to the existing permit application and provide information required to develop the new permit.

EXISTING EFFLUENT LIMITS

The existing permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH and Fecal Coliform bacteria. The effluent limitations as stipulated in Condition S1.A. of the existing permit are as follows:

	EFFLUENT LIMITATIONS	
Parameter	Average Monthly	Average Weekly
Biochemical Oxygen Demand (5 day)	30 mg/L, 2.5 lbs/day	45 mg/L, 3.8 lbs/day
Total Suspended Solids	30 mg/L, 2.5 lbs/day	45 mg/L, 3.8 lbs/day
Fecal Coliform Bacteria	100/100 mL	-----
pH	Shall not be outside the range 6.0 to 9.0	

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SUMMARY OF INSPECTIONS

The facility received its last Class I inspection on September 22, 1998. The inspection reports are filed in the record section at the Northwest Regional Office of the Department.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The compliance record for the facility was evaluated since the new facility began operating, which included the period of September 1997 through May 1998. During this period, there was one violation of 85% TSS removal and two violations of the monthly fecal coliform limit.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the engineering report submitted as a supplement to the permit application. The effluent constituents were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the *Wastewater Treatment Facility Engineering Report – Indian Ridge Youth Camp*, January 1995, Gray & Osborne, Inc., and *Plans and Specifications for the Wastewater Treatment Plant Improvements – Indian Ridge Youth Camp*, Gray and Osborne, Inc., July 1996. The Department approved these reports in April 1995 and July 1996, respectively. The approved design criteria for the facility are as follows:

Parameter	Design Quantity
Monthly average flow (max. month)	21,000 gpd
BOD ₅ influent loading (max. month)	61 lbs/day

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The technology-based limits for pH, BOD₅, and TSS taken from Chapter 173-221 WAC are as follows:

Table 1: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Monthly effluent mass loadings (lbs/day) were calculated as the maximum monthly design flow (0.021 MGD) x Concentration limit (30 mg/L) x Conversion factor (8.34) = mass limit 5.25 lbs/day. This was rounded up to 6 lbs/day.

Weekly effluent mass loadings (lbs/day) were calculated as the monthly effluent mass loading (5.25 lbs./day) x 1.5 = 7.88 lbs/day. This was rounded up to 8 lbs/day.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

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NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

In accordance with WAC 173-201A-100, the maximum boundaries of the mixing zones for the facility discharge are:

(i) Chronic Mixing Zone Boundaries:

- (a) The length of the mixing zone (parallel to the shoreline) is 300 feet from the outfall port in the downstream direction and 100 feet from the outfall port in the upstream direction.
- (b) The width of the mixing zone (perpendicular to the shoreline) is 10 feet. The mixing zone is centered over the outfall port extending 5 feet on both sides.

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(ii) Acute Mixing Zone Boundaries:

- (a) The length of the mixing zone (parallel to the shoreline) is 30 feet from the outfall port in the downstream direction and 10 feet from the outfall port in the upstream direction.
- (b) The width of the mixing zone (perpendicular to the shoreline) is 10 feet. The mixing zone is centered over the outfall port extending 5 feet on both sides.

DILUTION RATIOS

The dilution ratios of receiving water to facility effluent that occur within the allowable mixing zones at critical conditions were determined using a dilution model. The surface discharge module (CORMIX 3) of the CORMIX system was used to model the dilution occurring after discharge. The dilution analysis is included in the *Wastewater Treatment facility Engineering Report – Indian Ridge Youth Camp*. The dilution ratios as estimated by this analysis are:

(i) Receiving Waters : Facility Effluent = 17:1 for the chronic mixing zone.

(ii) Receiving Waters : Facility Effluent = 4:1 for the acute mixing zone.

The dilution ratios for the facility discharge are specified in Condition S1.B. of the permit.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Jim Creek, tributary to the Stillaguamish River, which is designated as Class A receiving water (fresh) in the vicinity of the outfall. Characteristic uses include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria for this water body are defined in Chapter 173-201A WAC for aquatic biota which are summarized below:

Parameter	Criteria
Fecal Coliforms	100 colonies/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum
pH	6.5 to 8.5 standard units
Toxics	No toxics in toxic amounts

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CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls, which the Department has determined to be AKART. A mixing zone as defined earlier, for the facility discharge has been authorized as allowed under WAC 173-201A-100. As stated earlier, the dilution ratios of receiving water to facility effluent that occur within these zones at critical conditions are 17:1 and 4:1 for chronic and acute zone respectively.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect. The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

A mixing zone analysis submitted by the Permittee addressed the water quality parameters such as temperature, pH, dissolved oxygen (DO), fecal coliform, ammonia and chlorine. The effluent limits in the proposed permit are based on this analysis.

BOD₅--Based on conclusions in the mixing zone analysis, technology-based effluent limitations for BOD₅ are placed in the permit.

Fecal Coliform--As stated in the mixing zone analysis, background data indicate that fecal coliform concentrations in Jim Creek may exceed water quality standards during the wet season. Therefore, the effluent limit for fecal coliform is based on water quality standards.

pH--Based on conclusions in the mixing zone analysis, technology-based effluent limitations for pH is placed in the permit.

Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at critical conditions. Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature is placed in the proposed permit.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

Since chlorine disinfection system was replaced with UV disinfection system during the recent facility upgrade, the only toxic chemical that is determined to be present in the discharge is ammonia. A reasonable potential analysis was conducted for ammonia to determine whether or not the effluent limitations would be required in this permit.

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Based on the available effluent ammonia data, the determination of the reasonable potential for ammonia to exceed the water quality criteria was evaluated with procedures given in EPA, 1991, at the critical condition. The analysis is shown in Appendix D. The analysis shows there is no reasonable potential for effluent ammonia to violate water quality standards. Therefore, no ammonia limits are placed in the permit. **The Permittee should make every effort to keep the effluent ammonia concentration as low as possible in order to avoid future permit limits and potential water quality problems in the receiving water.**

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is fairly consistent with agency guidance given in the current version of Ecology's *Permit Writer's Manual* (July 1994) for all treatment plants with less than 0.1 MGD average design flow.

LAB ACCREDITATION

With the exception of certain parameters, the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions under S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains condition S5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

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RESIDUAL SOLIDS HANDLING

To prevent water quality problems, the Permittee is required in permit condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the Snohomish Health District.

PRETREATMENT

There is no industrial discharge to the facility. The pretreatment condition S8 in the permit specifies substances that should not be discharged to the sewer system to protect the sewer system and the treatment facility. The pretreatment condition is a standard condition derived from the Federal Regulation 40 CFR 403.5.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

EVALUATION OF CONDITIONS NOT INCLUDED IN THE PERMIT

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Since the facility receives predominantly domestic sewage, the effluent contains ammonia that may be toxic to aquatic life. The facility is designed to remove majority of ammonia from the wastewater. The available data since January 1998 show that ammonia in the effluent is generally well below 1 mg/L. Based on this data, there is no reasonable potential for effluent ammonia to violate water quality criteria for the aquatic life. Another toxic chemical in the municipal effluent would be chlorine. During the recent upgrade, the chlorination system was replaced by UV disinfection system. In addition, this is a very small facility with maximum monthly average design flow of 21,000 gallons per day (gpd). Currently, the facility is operating at less than 10,000 gpd in the winter months and less than 6,000 gpd in the summer months. Therefore, the permit does not require the facility to perform whole effluent toxicity test.

HUMAN HEALTH

The Department's Permit Writer's Manual contains a two step process to determine whether a reasonable potential determination for Human Health Criteria should be made for any discharger. This process is described in Section 3 (Screening and Prioritization) of Chapter VII, Deriving Water Quality-Based Effluent Limits for Protection of Human Health.

Based on the criteria established in step 2 of this process, the facility is considered a "low priority" facility. In addition, due to predominantly domestic nature of the wastewater discharge, human health related impacts in the receiving water from the discharge are not expected.

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Therefore, the discharge from the facility is not considered for human health-based effluent limits.

SEDIMENT QUALITY

The Department has not yet established freshwater sediment quality standards and therefore, sediment quality in the receiving water is not evaluated.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards based on new information obtained from sources such as inspections, effluent monitoring and TMDL studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

It is recommended that the permit be issued for almost the full allowable term of five years. Due to Ecology's basin cycle approach in permit issuance, it is recommended that the permit expire on May 1, 2004.

REFERENCES FOR TEXT AND APPENDICES

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Social and Health Services – Indian Ridge Youth Camp.

1. January 1995. Wastewater Treatment Facility Engineering Report, Gray & Osborne, Inc.
2. July 1995. Design Development Report – Secondary Wastewater Treatment Facility, Gray & Osborne, Inc.
3. July 1996. Plans and Specifications for the Wastewater Treatment Plant Improvements, Gray and Osborne, Inc.

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

Public notice of application was published on November 22 and 29, 1997, in *The Skagit Valley Herald* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 - 160th Avenue SE
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (425)649-7201, or by writing to the address listed above.

APPENDIX B—GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART--An acronym for “all known, available, and reasonable methods of prevention, control, and treatment.”

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation--The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

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Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.)

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction, e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over, as short period of time as is feasible.

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Industrial User--A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference--A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) [including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA], sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through--A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)--A calculated value five times the MDL (method detection level).

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic faunas. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—FACILITY LAYOUT

APPENDIX D—REASONABLE POTENTIAL CALCULATION FOR AMMONIA

APPENDIX E—RESPONSE TO COMMENTS

1. No comments were received in response to the public notice for this permit.
2. Page 5, Section S1. A. of the permit:
Based on comments from Water Quality section staff at NWRO, the Average Weekly Limit of 200/100 mL for Fecal Coliform Bacteria was placed in the permit. This is the best estimate for maximum limit based on Water Quality Standards.